

THE CALIFORNIA VETERINARIAN

PROGRAM

On Pages

28-29

Midwinter Conference

JANUARY 23, 24, 25, 1956

DAVIS, CALIFORNIA



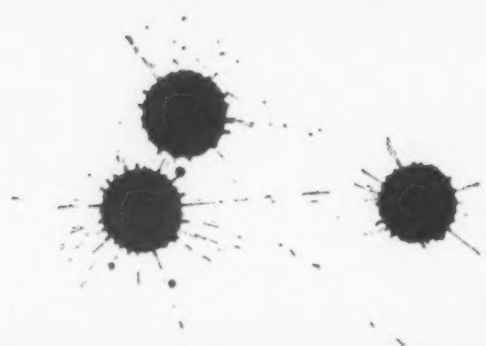
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NOVEMBER-DECEMBER

1955



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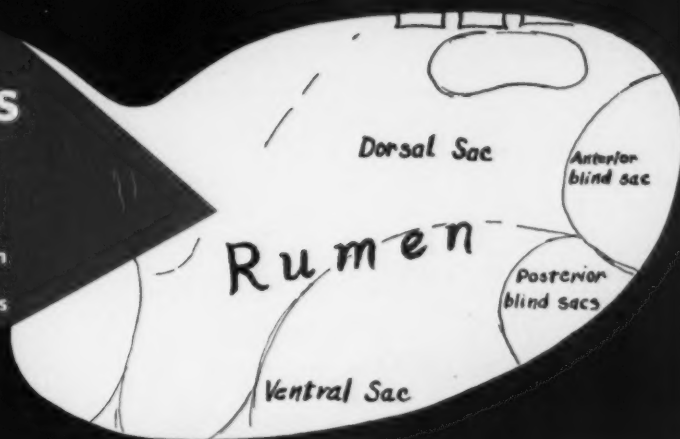
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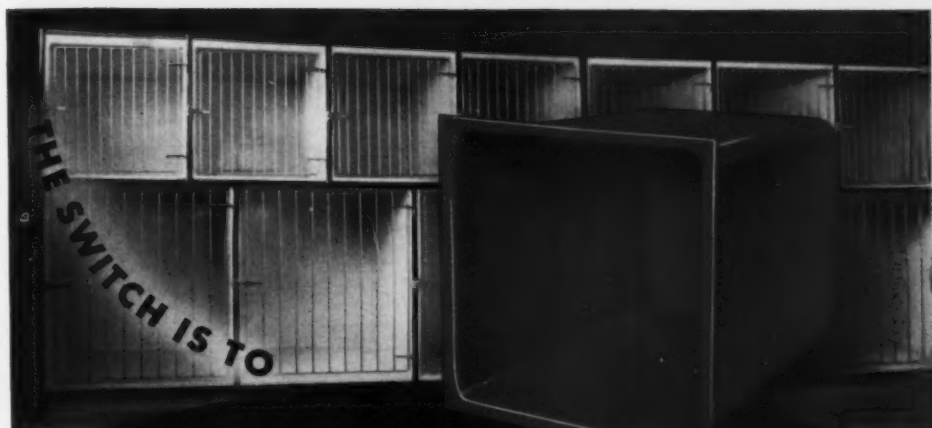
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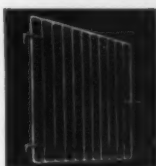
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1. Rachman, M., and Frucht, T. R.: Vet. Med. 49:341, 1954.

2. Sternfels, M.: Vet. Med. 50:82, 1955.

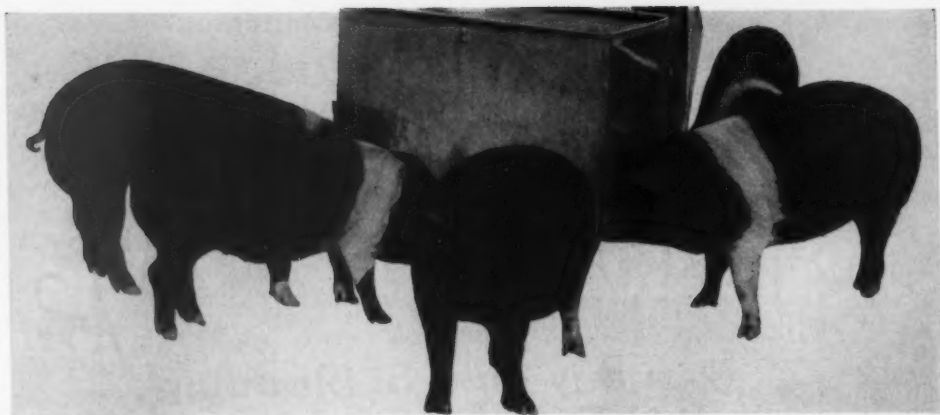
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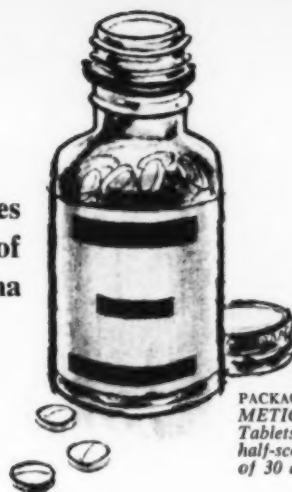
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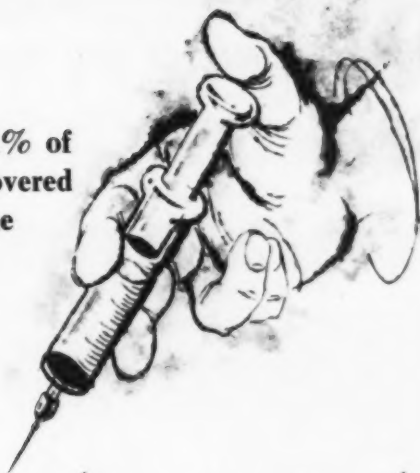
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	150-200	80	18	2	80.0
	250-300	77	17	6	77.0
	350-400	43	3	1	91.5
	500	2	0	0	100.0
Ketosis with Complications	100	1	0	0	100.0
	150-200	11	2	0	84.6
	250-300	6	0	1	85.7
	350-400	3	0	0	100.0
	500	2	1	0	66.6
Totals		244	44	12	(average) 81.3

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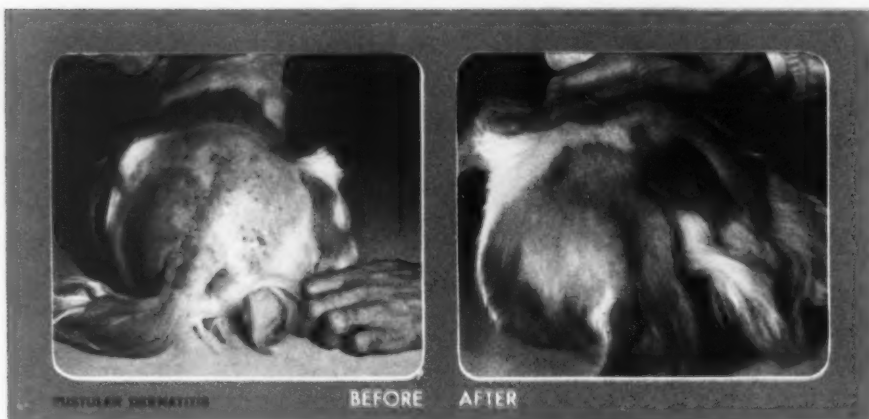
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What makes a pooch feel bad,
Or what is wrong with kitty-cat
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When you have done your share,
To thank you 'cause you've done
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Just what a good pet needs.



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with a weak hypnotic action

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Department of Veterinary Medicine

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In Memoriam



DR. CHARLES D. STAFFORD

Dr. Charles D. Stafford of Novato, Second Vice-President of the California State Veterinary Association, died suddenly October 18, 1955, of coronary thrombosis at the age of 47 years.

Born February 8, 1908, at San Antonio, Texas, he received his veterinary degree from Kansas State College in 1935 and entered the service of the Bureau of Animal Industry. A few months later he became associated with Dr. S. T. Michael at the SPCA hospital in San Francisco. In the late thirties he established a general practice in Novato.

Enlisting in the U. S. Army Veterinary Corps in June, 1935, he was called to active duty in June, 1942, and saw service in the European, African, and Middle East Theatre of Operations. He was released from active duty with the rank of Lt. Colonel, having been awarded the Bronze Star while serving with the 10th Armored Division.

"Charlie" was a past third vice-president and executive board member of the CSVMA. He also served as a member of the state committee on Brucellosis which worked with the State Department of Agriculture in preparing the present Brucellosis law and was a prominent member of the Redwood Empire Veterinary Medical Association as well as the AVMA. He was consulting veterinarian for the Guide Dogs for the Blind, Inc., which has its headquarters in San Rafael.

In civic affairs Dr. Stafford was chairman of the Board of Directors of the North Marin Water District, a Novato Fire Commissioner, and a member of the San Rafael Rotary Club and the Donald V. Westlund Post 781, Veterans of Foreign Wars.

He is survived by his wife, Marie Togni, his son, Michael 13, and his daughter, Susannah 11, and a brother and a sister.

Twenty veterinarians from the state attended the funeral services which were held in the Redwood Chapel in Novato, Friday, October 21. Dr. Stafford was a credit to his community and to his profession. He was a devoted, tireless worker to any cause he felt would lead to the advancement of his profession. To have known him as a client or a colleague was fortunate but to have known him as a friend was an honor. His efforts were gladly given that we might all be proud of the veterinary profession.

THE CALIFORNIA VETERINARIAN

NOVEMBER-DECEMBER, 1955

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Volume 8

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Christmas 1955

Retrospection is good for the soul. In recalling the many events of yesteryear, the happy ones come sharply into focus, like the day in 1947 when I became associated with the CSVMA. The 1956 Annual Meeting will mark my tenth year with the CSVMA and I look forward to it. There will be a great deal of hard work involved, but there will be compensations in so doing, such as meeting with the finest group of men I have ever had the good fortune to know.

Nine years ago we did not have a JOURNAL, approximately \$4,000 in the bank, no group insurance, nine local associations, 420 members and at the Annual Meeting in San Diego, there were but 11 exhibitors (35 to 40 exhibitors will come to the 1956 Annual Meeting). Then came the first issue of THE CALIFORNIA VETERINARIAN, 30 pages and eight advertisers.

We have made an enviable record of progress. We have approximately 1,000 members, 20 local associations, a group insurance plan which has paid thousands of dollars in claims, a JOURNAL of 54 to 60 pages, 29 advertisers, carrying 33 to 35 pages of advertising, and reaching veterinarians in Washington, Oregon, Nevada, Idaho and Arizona. We have letters from all over the world praising our JOURNAL. At the Toronto and Minneapolis AVMA meetings, we were told that our JOURNAL is tops in its field and that our State organization is the best organized and managed in the 48 states and leads in membership. We have the cooperation of allied groups, such as the Wool Growers Association, the Cattlemen's Association, the Farm Bureau Federation, the California Hay, Grain and Feed people and others.

WHAT IS AHEAD? We are on the threshold of greater achievements. In 1956 we are planning to exhibit at many of the representative California County Fairs. We will show photographs and distribute literature telling the story of the California veterinarian and what he means to the community. Veterinarians will be in attendance at the booths, passing out literature and answering questions on public health problems, et cetera. We are designing a folder telling about the veterinarian's place in society, explaining how his contribution aids the health and well-being of man and animals. It will be the "kick-off" of a concentrated public relations job that needs to be done by our group. We will plan for legislative action in Sacramento that will be to our interest. We plan to expand our radio program, KNBC, under Mr. Henry Schacht. We are also planning a Speaker's Bureau. I know you will agree that these are "springboards" for better things to come in 1956.

We have added Mr. Herbert Warren to assist on publicity and public relations. Mr. Warren has had more than 25 years of experience in the field of public relations and publicity. A strong campaign in both fields will shortly be under way.

We have looked into the past and into the future, but right now the present means that the holiday season is here, so to each and everyone of you and your families, a

VERY MERRY CHRISTMAS AND A HAPPY AND PROSPEROUS NEW YEAR.

Charles S. Travers
Executive Secretary

Veterinary Problems and Responsibilities of the Track Veterinarian*

LEWIS E. HARRIS M.Sc., F.A.I.C.

Research Director, Norden Laboratories, Lincoln, Neb.

The veterinarian has a most important role in the field of racing, whether official veterinarian, track veterinarian or practitioner. Much of the public's confidence in the integrity of racing can be credited to the high calibre of veterinary service, and strict ethical code maintained by the veterinary profession. The veterinarian has a great deal of responsibility in his relation to racing matters and needs to give careful attention to this phase of his professional activity for there are many situations which could cause embarrassment, or involvement in an incident with unpleasant consequences, unless certain precautions are utilized.

Where racing animals are involved there are several important factors to keep in mind, in addition to the routine problems of diagnosis and treatment, surgery, hygiene and nutrition. These include knowledge of official rules and regulations in areas where the client will be running his horse or dogs, cautioning the client about possession or use of illegal drugs and instruments, and supplying reliable information about veterinary phases of racing.

Copies of official rules and regulations may be obtained from the secretary of any state racing commission. The veterinarian should be familiar with these and be in position to review pertinent sections with the client. As an example, some states have the "48 hour rule" which provides that no drug is to be administered to any animal within 48 hours prior to a race. Other states have regulations which deal with the same matter but in a different method. The possession of certain drugs is specifically prohibited in some states, and possession of hypodermic syringes and needles is prohibited in most states. Many racing commissions require the veterinarian to report all drugs administered to animals within their jurisdiction. The veterinarian may become innocently involved in a case and receive unfavorable publicity simply because he is not familiar with the rules and regulations. As a matter of fact, such incidents occur nearly every year.

Usually out of curiosity, but sometimes with definite purpose, a horseman may inquire of the veterinarian whether a certain drug can be detected in urine or saliva; whether there are drugs which might help a horse and not be detected in analysis; and related questions. Such inquiries must be handled carefully for the answer may later cause an involvement or an investigation concerning improper use of drugs. Generally speaking, there are few, if

any, drugs which cannot be detected, depending upon quantity, time and method of administration, physiology of the individual animal and many other factors. A "rule of thumb" might be that if a drug is present in body tissues or fluids in sufficient quantity to exert appreciable pharmacological action, it can usually be detected by various analytical procedures. There are many things in this connection which are not generally known. For example, liniments or braces containing procaine, benzocaine or related local anesthetics may be applied to the unbroken skin and sufficient quantities be absorbed to result in detection in body fluids. Further, large therapeutic doses of thiamin or vitamin B complex can be detected, and some state racing commissions now take disciplinary action in such cases where it is obvious that such vitamins were administered in therapeutic rather than nutritional levels.

There is much superstition in racing, some of which is equal to the use of asafetida to prevent diphtheria in children, copper wire on the wrists to cure rheumatism and rubbing certain stones to remove warts. Many horsemen cling to obsolete therapeutic measures and worthless rituals in their care of racing animals. In addition to handling these situations diplomatically, the veterinarian is often faced with statements that a certain secret drug, which cannot be detected, is being used to "help" horses. The dollar volume spent for worthless "doping" drugs is probably very high. A certain drug preparation develops a reputation for increasing racing animal performance, and other horsemen risk using it before any true facts are available. The veterinarian can render a fine service to his client by explaining the many reasons why a rumored case of doping might not be detected. The drug used may contain nothing of pharmacological or therapeutic importance; dosage may be too small for either pharmacological action or detection; time of administration; the individual animal's physiology and metabolism; the fact that only winners (occasionally place and show animals) are normally sampled, plus other variable factors. Horsemen should further be cautioned against the purchase and use of unknown liniments or braces, medications or nutritional supplements for these could contain drugs which would be detected in the routine analysis of urine and saliva. It is best to purchase all supplies from the veterinarian and reputable feed dealers.

In most states there is an official veterinarian who is directly responsible to the rac-

(Continued on page 32)

*Abstract of paper presented at the CSVMA Convention, Monterey, June 20-22, 1955.

Lethal and Sublethal Traits in Farm Animals After a Check-List and Proposed Numbering System Given by Lerner

(1944, J. Hered., 35, 219-224)*

CLYDE STORMONT, Ph.D.

School of Veterinary Medicine, Univ. of Calif., Davis, Calif.

No.	Trait	Comments	Pertinent References
Cattle			
A1	Achondroplasia; (dominant)	Common name: "Bull-dog calves." Fetuses die and are aborted usually during fourth month of gestation. They are characterized by having very short legs and a short, thick concave face. The heterozygotes or "carriers" are short-legged but otherwise normal. The short-legged "Dexter" cattle are an example of a breed based on this lethal gene. Also occurs in Jerseys.	Punnett, 1936 JG, 32:65
A2	Achondroplasia; (recessive)	Similar to above but less extreme. Calves usually carried to full term but die soon after. "Carrier" condition not recognized. Reported in Telemark, Holstein-Friesian and Nyganda cattle.	Brandt, 1941 JH, 32:183. Gregory et al., 1942 JH, 33:317
A3	Epitheliogenesis imperfecta	Common name: "Skinless." Bilateral lesions most common below knees and hocks and on the muzzle, ears and mucous membranes. Reported in Holsteins, Aryshires and Jerseys.	Regan et al., 1935 JH, 26:337. Hutt & Frost, 1948 JH, 39:131
A4	Hypotricosis congenita	Common name: "Hairless." Calves born almost completely hairless and die a few minutes after birth. Reported in Holstein-Friesians.	Mohr & Wriedt, 1928 JG, 19:315
A5	Acroteriasis congenita	Common name: "Amputated." Forelegs terminate at elbow and hind legs at hock joint. Upper jaw protrudes downward and lower lacks most of the teeth; also cleft palate. Calves are stillborn or die soon after birth. Reported in Holstein-Friesians.	Wriedt & Mohr, 1928 JG, 29:187
A6	Mummification	Limbs stiff and joints prominent. Short neck. Fetuses die during last trimester of gestation. Reported in Red Danish cattle.	Loje, 1930 TL, 10:517
A7	Paralyzed hindquarters	Normal except that calves cannot stand on hindquarters. Since the condition does not improve, slaughter is necessary. Reported in Red Danish cattle.	Loje, 1930 TL, 10:517
A8	Muscle contracture	Head drawn up towards back and extremely rigid. Limbs folded around or beneath body. Calves die shortly after birth. Reported in Holstein-Friesians.	Hutt, 1934 JH, 25:41
A9	Ankylosis of jaw	Ossification of the articulation of the lower jaw.	Mohr, 1930 NV, 14:1
A10	Short spine	Fusion of ribs and vertebrae. Calves stillborn or die at birth. Reported in Norwegian cattle.	Mohr & Wriedt, 1930 JG, 22:279
A11	Ljutikow's lethal	Inferred from records of stillborn calves in which there was no recorded evidence of abnormalities.	Ljutikow, 1932 BZ, 1:21
A12	Congenital dropsy	Accumulation of water in the subcutaneous tissues and in the thoracic and abdominal cavities. Calves born at term or one to two months prematurely. Reported in Swedish Lowland cattle and in Aryshires.	Johansson, 1941 ICGE, :169. Donald et al., 1952 BVJ, 108:227.
A13	General ankylosis	All joints ossified; cleft palate.	Stang, 1940 ZZ, 46:280.
A14	Impacted molars	Mandibles shortened, premolars impacted in jaw causing lateral surface to bulge or break. Calves die during first week of postnatal life. Reported in Milking Shorthorns.	Helzer & Hervey, 1937 JH, 28:123
A15	Achondroplastic micromelia	Calves cannot survive on pasture because of imperfection of lower jaw in addition to shortened limbs.	Ljutikow, 1937 BZ, 6:413
A16	Atresia ani	Imperforate anus; calves do not survive surgical treatment.	Kuppuswami, 1937 IJ, 7:305
A17	Deformed limbs	Crooked legs, sometimes with ankylosis. Calves stillborn or if alive, unable to stand.	Ruzhevsky, 1938 BZ, 7:547
A18	Brain hernia	Frontal and parietal bones fail to close. Calves may be stillborn.	Shaw, 1938 JH, 29:319
A19	Agnathia;	Lower jaw half the length of normal; affected calves unable to nurse.	Annett, 1939 JG, 37:301
A20	Agnathia;	Jawless; accompanied by wattle-like structure. All cases studied were fetal.	Ely et al., 1939 JH, 30:105
A21	Sex-linked lethal	Shortage of male calves.	Andreesen, 1940 ABA, 10:24
A22	Abnormal skull	Nasal openings fused. Calves die at birth or shortly thereafter.	Ilancic, 1940 Z, 15:129
A23	Missing phalanges	First and second phalangeal bones missing.	Johansson, 1941 ICGE, :169
A24	Hydrocephalus	Internal hydrocephalus accompanied by bone abnormalities.	Cole & Moore, 1942 JAR, 65:483
A25	Congenital spasm	Vertical intermittent spasms of head and neck. Calves die shortly after birth. Jerseys.	Gregory et al., 1944 JH, 35:195

No.	Trait	Comments	Pertinent References
A26	Prolonged gestation:	Calves overdue from 20 to 90 days are postmature but normal in appearance and are usually stillborn or die within a few hours after delivery. Cows carrying prolonged fetuses show a marked deficiency in udder development and fail to undergo the changes that prepare them for parturition. Deliveries are assisted in all cases and caesarian section is often necessary. Holstein-Friesians.	Gregory et al., 1951 PAB Series A 861. Jasper, 1960 CV, 40:105
A27	Prolonged gestations	Similar to A26 but perhaps more severe. Calves delivered by embryotomy from 80 to about 200 days overdue. Cows sent to slaughter carrying prolonged fetuses as many as 230 days overdue. Postmature calves exhibit acromegalic characteristics. Swedish Red and White Breed.	Hallgren, 1951 NVM, 3:1043
A28	Streaked hairlessness (sex-linked)	Gene carried only in females. Carrier females exhibit streaked hairlessness and the sex ratio (2 females to 1 male) in the offspring of such females shows a deficiency of male calves. Holstein-Friesian.	Elridge & Altheson, 1953 JH, 44:295

Horses

B1	Atresia coli	Closure of colon, often associated with brain defects; colts born alive.	Yamane, 1927 ZAV, 46:188
B2	Frederiksberg lethal	Inferred from high degree of sterility in inbred matings of white horses.	Wriedt, 1924 ZTZ, 1:231
B3	Sex-linked lethal	Sex ratio of 2 females to 1 male.	Kislovsky, 1932 ZTZ, 24:269
B4	Epitheliogenesis imperfecti	Denuded skin on limbs, occasionally missing a hoof.	Plank, 1936 NFTA, :233
B5	Deformed forelegs	Atrophied muscles or lack of balance between tendons.	Prawochenksi, 1936 JH, 27:411

Swine

C1	Brain hernia "Catlin Mark"	Skull opening involving frontal and parietal bones, affected piglings born alive.	Hughes & Hart, 1934 JH, 25:111
C2	Paralysis	Hind limbs paralyzed; piglings born alive.	Mohr, 1930 NV, 14:1
C3	Artesia ani	Mode of inheritance not clear.	Berge, 1941 JH, 32:271
C4	Cleft palate	Affected piglings born alive but unable to nurse.	McPhee et al., 1931 JH, 22:393
C5	Thickened forelimbs	Muscle fibers displaced by connective tissue infiltration; piglings born alive.	Carstens et al., 1937 Z, 12:205
C6	Muscle contracture	Rigid forelimbs; piglings usually stillborn.	Hallquist, 1933 H, 18:219
C7	Split ears	Associated with deformed hindquarters and sometimes cleft palate; piglings usually stillborn.	Annett 1938 JH, 29:460
C8	Hydrocephalus	Fluid found in subarachnoid spaces; some of the piglings are stillborn.	Blunn & Hughes, 1938 JH, 29:203
C9	Amputated	Both front and hind appendages missing; piglings born alive.	Johnson, 1940 JH, 31:239
C10	Diverticulosis	Pockets formed by the mucus membrane of the ileum associated with marked thickening of the gut. As a result of the irritation caused by the diverticuli, inflammation of the mesentery sets in and local peritoneal adhesions occur. The pockets often burst when the piglets are 3 to 4 months of age, resulting in peritonitis and death. Some animals may live long enough to reproduce. Berkshire hogs.	Hancock, 1950 PRFC, :214

Sheep

D1	Muscle contracture	Flexure of limbs and wry neck; lambs stillborn.	Roberts, 1929 JG, 21:57
D2	Earless and cleft palate	Often associated with tripartite claws; affected lambs born alive.	Mohr, 1929 Z, 4:105
D3	Paralysis	Hind limbs paralyzed; lambs born alive.	Zophoniasson, 1929 NJ, 11:327
D4	Rigid fetlocks	Skeleton deformed; associated with short wool and hernia; lambs born alive.	Zophoniasson, 1929 NJ, 11:327
D5	Amputated	Limbs amputated at fetlocks.	Hohn, 1942 DTW, 50:349
D6	Lethal Gray	No homozygous gray adults. Gray x Gray=2 gray; 1 black.	Constantinescu, 1932 INZR, 1:15. Also ZTZ, 44:211
D7	Dwarf	Thyroid disturbance leading to death within a month after birth.	Bogart & Dyer, 1942 JAS, 1:87
D8	Congenital photosensitivity	Affected animals normal at birth thrive until they begin to feed on grass. The ears, eyelids and lips first become edematous, then raw and begin to bleed. Death is inevitable except when the animal is taken inside and sheltered from direct sunlight. Condition is similar to facial eczema in that the outward symptoms depend on the presence of phyloerythrin. However, the liver is not damaged as in facial eczema. Southdowns.	Hancock, 1949 PRFC, :85
D9	Lethal myodystrophia (similar to D1)	A muscular dystrophy occurring early in fetal life. Lambs born alive but die shortly thereafter because of inability to respire.	Morley, 1954 AVJ, 30:237

(Continued on next page)

No.	Trait	Comments	Pertinent References
Chickens			
E1	Creepers	Shortened extremities in heterozygotes. Homozygotes usually die first week of incubation.	Hamburger, 1942 BS, 6:311
E2	Congenital loco	Affected chicks unable to stand; head bent backwards.	Knowlton, 1929 OB, :253
E3	Sticky	Lack of absorption of amniotic and allantoic fluids; bones deficient in calcium; embryos die in last week of incubation.	Byerly & Jull, 1932 JEZ, 62:489
E4	Wyandotte lethal	Linked with recessive white in Wyandottes.	Dunn, 1932 AN, 57:345
E5	Congenital palsy	Tremor affecting hatched chicks which occasionally survive.	Hutt & Child, 1934 JH, 25:341
E6	Cornish lethal	Shortened extremities in heterozygotes; homozygotes die during last week of incubation.	Landauer, 1935 JG, 31:237
E7	Sex-linked lethal	Shortage of females.	Upp and Waters, 1935 PS, 14:372
E8	Amaxilla	Maxillae absent or reduced; beak bent to one side; most of the affected chicks unable to hatch.	Asmundson, 1936 JH, 27:401
E9	Flightless	Defective structure of flight feathers. No homozygotes raised to maturity.	Warren, 1937 JH, 28:17
E10	Malformed skeleton	Curvature of spine and pelvis; birds developing defect are unable to move.	Czaja, 1939 WPCC, :55
E11	Naked	Sex-linked; reduces down and plumage; half of the affected chicks hatch but only half of these survive.	Hutt & Sturkie, 1938 JH, 29:371
E12	Short beak	Upper mandible and certain long bones shortened; 87 per cent of homozygotes die before hatching.	Landauer, 1941 G, 26:426
E13	Microphthalmia	Diameter of eyeballs reduced; mortality in late embryonic or early post-hatching stages.	Gruenwald, 1944 AR, 88:67
E14	Micromelia (two genes)	Double recessives exhibit "parrot-beak" and shortened and thickened extremities.	Asmundson, 1942 JH, 33:328
E15	Talpid	Extra digits frequently webbed; ectopia always present, homozygotes die at 8-10 days of incubation.	Cole, 1942 JH, 22:83
E16	Chondrodystrophy (extreme type)	Affected embryos fail to hatch	Lamoureux, 1942 JH, 33:275
E17	Deformed mandibles	Lower mandible missing; upper deformed; cerebral hernia; unable to pip shell.	Marble et al., 1944 PS, 23:114
E18	Wingless	Wings absent or vestigial; embryos do not survive.	Waters & Bywaters, 1943 JH, 34:213
E19	Chondrodystrophy (less extreme)	Shortened bones of limbs but no parrot beak; few homozygotes hatch and none survive beyond one week.	Hays, 1944 AN, 78:54

Abbreviations in Literature References

ABA	Anim. Breed Abstr.	IJ	Indian J. Vet. Sci. & Ani. Husb.	OB	Oreg. Ag. Exp. St. Bull.
AN	Amer. Naturalist			PAB	Portugallie Acta Biol.
AR	Anat. Record	INZR	Ann. Inst. Nat. Zootech. Romanie.	PRFC	Proc. Ruakura Farmers' Conf. New Zealand
AVJ	Australian Vet. J.	JAR	J. Agr. Res.	PS	Poult. Sci.
BS	Biol. Symposia	JAS	J. An. Sci.	TL	Tidsskv. Landok.
BJV	British Vet. J.	JEZ	J. Exp. Zool.	WPCC	Proc. 7th World's Poultry Conf. Cleveland
BZ	Biol. Zhurn.	JG	J. Genetics	Z	Zuchtungsk.
CV	Cornell Vet.	JH	J. Hered.	ZAV	Zert. Ind. Abst. Vereb.
DTW	Deutsch Tierarzt. Woch.	NFTA	Nene Forsch. Tierz. abst.	ZTZ	Zeit. Tierarzt. Zucht.
G	Genetics	NJ	Nord. Jordburgst.	ZZ	Zeit. Zucht. B.
H	Hereditas	NV	Naturens Verden.		
IGCE	Proc. 7th Int. Cong. Gen. (Edinburgh)	NVM	Nord. Vet. Med.		

*Prepared for distribution in connection with a paper titled "Inherited Defects in Animals" given at the 1955 Midwinter Conference of the California State Veterinary Medical Association at the School of Veterinary Medicine, University of California, Davis.

In Memoriam

Dr. C. Edward Taylor, District Veterinarian, Bureau of Livestock Disease Control, State of California, Department of Agriculture, passed away suddenly on November 28th, while attending a business meeting in Sacramento. Dr. Taylor was Sergeant-at-Arms, and a member of the Membership and AVMA Affairs Committee of the CSVMA. He was also president of the Bay Counties VMA. Notice of Dr. Taylor's demise reached us as the "Journal" was going to press. His activities in the veterinary profession will be detailed in the January-February issue.



Animal Crackers, Inc., Trade Show

The CSVMA was represented at the fifth annual Animal Crackers, Inc., Trade Show, held in conjunction with the seventh annual National Retail Pet Supply Association Convention, September 23-25, at the Sheraton-Palace Hotel, San Francisco.

Donald A. Hamilton, chairman, and George F. Lineer, co-chairman of the Trade Show Committee, arranged for exhibit space, and two booths were set up. One was devoted to "The Veterinarian and Your Pet," and the other was "The Veterinarian in Public Health."

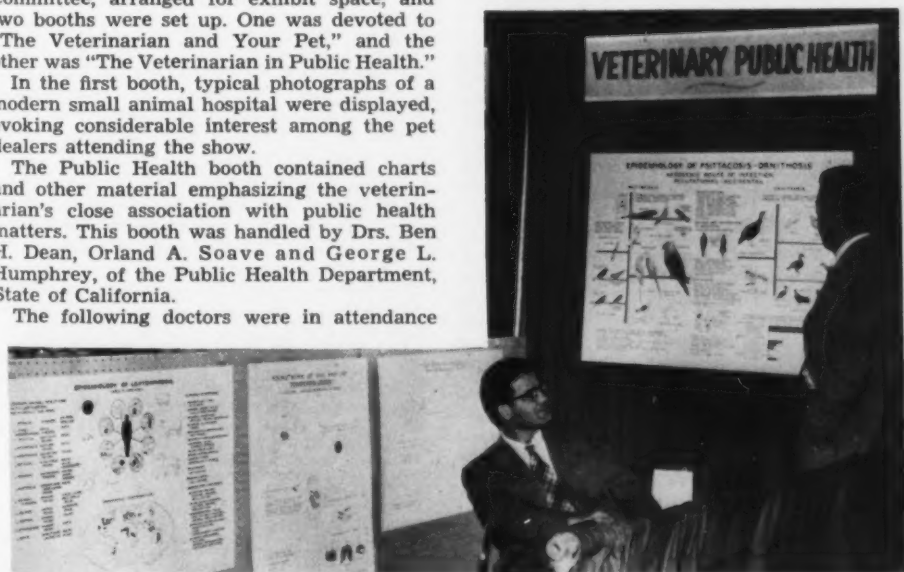
In the first booth, typical photographs of a modern small animal hospital were displayed, evoking considerable interest among the pet dealers attending the show.

The Public Health booth contained charts and other material emphasizing the veterinarian's close association with public health matters. This booth was handled by Drs. Ben H. Dean, Orland A. Soave and George L. Humphrey, of the Public Health Department, State of California.

The following doctors were in attendance

at the Pet Booth: Howard F. Carroll, George P. Bertetta, Joseph M. Arburua, J. D. Wood, W. L. Kanawyer, Irving M. Roberts, Alex J. Kniazeff and Charles D. Stafford.

Executive Secretary Charles S. Travers spent considerable time at the show, making many valuable contacts among the pet dealers and various manufacturers represented.



Bovine Blood Serum Concentrations of Chloromycetin Following Intramuscular Administration

F. E. EADS, D.V.M., M.S. and K. D. VAN NOCKER, D.V.M.

Parke, Davis & Company, Detroit, Michigan

Although numerous studies on blood levels have been conducted following the administration of both single and multiple doses of chloromycetin [®] (chloramphenicol) in dogs¹, few data are available on blood serum concentrations of chloromycetin following intramuscular administration in the bovine.

In 1951 Weston² administered a single intramuscular dose of an aqueous suspension of micronized chloromycetin to dogs. Blood serum-chloromycetin levels of 2.2 mcg. per cubic centimeter were obtained two hours after administration of 50 mg. per kilogram of body weight. This concentration persisted through the 8-hour sampling period and gradually decreased until less than 1 mcg. chloromycetin per cubic centimeter of serum was present 32 hours after injection. When the dosage was increased to 100 mg. per kilogram of body weight, blood serum levels of 3.1 mcg. were obtained two hours after the intramuscular injection of chloromycetin, with the highest concentration appearing at the 6-hour sampling period. One mcg. of chloromycetin per cubic centimeter was still present 24 hours after administration.

Intravenous chloromycetin has been used experimentally in cattle³. When 18 mg. per kilogram of body weight was administered intravenously in propylene glycol, a drop was observed in the chloromycetin-blood serum level from 13 mcg. per cubic centimeter 45 minutes after injection to 7 mcg. per cubic centimeter after six hours.

Because of the excellent clinical results obtained when chloromycetin intramuscular was used in the treatment of two hundred Hereford calves suffering from shipping fever⁴, it was felt that a systematic study of the blood serum levels in the bovine should be made. The present paper reports the results of this study.

Materials and Methods

Four calves were used for each chloromycetin dosage scheduled in this blood level study. All calves were purchased three days prior to starting this study and were confined at Parkedale, our biological farm. These calves averaged 350 lbs. in body weight and were apparently healthy with the exception of Calf

No. 2972. This calf, at the time of injection, was depressed and had a temperature of 103.2 degrees. Chloromycetin was administered intramuscularly deep into the neck muscles.

In the present study, one group of four calves (2973, 2967, 2968, and 2974) received 1 gram chloromycetin intramuscular while the second group of four calves (2971, 2972, 2965, and 2969) received 2 grams of this parenteral antibiotic. All blood was drawn from the jugular vein. Blood samples were drawn prior to dosage and at one, two, four, twelve and twenty-four hours after the injection of 1 gram of chloromycetin intramuscular, and at one, two, four, twelve, twenty-four and forty-eight hours after injection of 2 grams of this material.

The resulting blood serum was assayed by the microbiological and colorimetric methods.

The microbiological assay⁵ is based on inhibition of growth of *Shigella sonnei* as measured turbidimetrically. The colorimetric assay⁶ is based on reduction of the nitro group of chloromycetin by titanous chloride, following which the resulting amine is determined colorimetrically. This determination includes inactive metabolic products of chloromycetin which contain the nitro group, as well as unchanged chloromycetin. All results are expressed as micrograms of chloromycetin-equivalents per cubic centimeter of serum.

Results and Discussion

The analytical results are presented in Tables 1 and 2 (see next page). It is evident that the maximum serum level is found at the 2 and 4-hour sampling periods when chloromycetin is injected intramuscularly either in single 1-Gm. doses or in single 2-Gm. doses, indicating fairly rapid absorption of chloromycetin. Chloromycetin given intramuscularly in single doses of 1-Gm. and 2-Gm. produced blood levels that were sustained for periods of at least 12 hours with some animals having a detectable amount 24 hours after injection. This indicates that the drug is probably absorbed slowly over a long period of time, and may, in part, account for the excellent therapeutic effect⁴. In most instances, the colorimetric values are greater than the microbiological assay values because of the presence of inactive nitro compounds derived from

⁵ Joslyn, D. A., and Galbraith, M. A.: "A Turbidimetric Method for the Assay of Antibiotics," *J. Bact.*, 59, 711 (1950).

⁶ Glazko, A. J., Wolf, L. M., and Dill, W. A.: "Biochemical Studies on Chloramphenicol (Chloromycetin). I. Colorimetric Methods for the Determination of Chloramphenicol and Related Nitro Compounds," *Arch. Biochem.*, 23, 411 (1949).

^{*}Parke, Davis & Company.

¹ Eads, F. E., Glazko, A. J., Wolf, L. M., Ehrlich, John, and Galbraith, M.: "Blood Level Studies in Dogs Following the Administration of Chloromycetin," *Am. J. Vet. Res.*, 13, 204 (1952).

² Weston, J. K.: Personal communication.

³ Schlingman, A. S.: Personal communication.

⁴ Barnes, R. W.: "Chloromycetin Intramuscular and Its Effect in the Treatment of Shipping Fever in Calves." To be published.

TABLE 1. *Bovine Chloromycetin Blood Serum Levels as Determined by Microbiological and Colorimetric Assays Following Administration of a Single 1-Gram Dose*

Calf No.	TIME OF SAMPLING AFTER DOSING (HOURS)					
	Chloromycetin equivalents in blood serum (mcg. per cc.)					
	1		2		4	
	micro-biological	colori-metrical	micro-biological	colori-metrical	micro-biological	colori-metrical
2973	QNS*	0	1.5	0.4	<1	0.1
2967	QNS	0.2	<1	0.4	<1	0.4
2968	<1	0.9	QNS	1.5	1.3	1.5
2974	QNS	0.7	<1	1.1	<1	0.7
	12		24			
	micro-biological	colori-metrical	micro-biological	colori-metrical		
2973	<1	0	<1	0		
2967	<1	0.5	<1	0		
2968	<1	1.3	<1	0.4		
2974	<1	1.1	<1	0.7		

*QNS—Quantity not sufficient.

TABLE 2. *Bovine Chloromycetin Blood Serum Levels as Determined by Microbiological and Colorimetric Assays Following Administration of a Single 2-Gram Dose*

Calf No.	TIME OF SAMPLING AFTER DOSING (HOURS)					
	Chloromycetin equivalents in blood serum (mcg. per cc.)					
	1		2		4	
	micro-biological	colori-metrical	micro-biological	colori-metrical	micro-biological	colori-metrical
2971	<1	0.6	<1	1.1	<1	0.4
2972	<1	0	<1	0.3	<1	0.9
2965	QNS*	0	1.8	1.9	2.1	1.6
2969	<1	0.6	<1	0.9	<1	1.9
	12		24		48	
	micro-biological	colori-metrical	micro-biological	colori-metrical	micro-biological	colori-metrical
2971	<1	0.6	<1	0	<1	0.2
2972	<1	0	<1	0	<1	0
2965	1.9	1.6	<1	0	<1	0
2969	<1	0	<1	0	<1	0.6

*QNS—Quantity not sufficient.

chloromycetin⁷. This inactive portion of the drug exists as a conjugate with glucuronic acid which is excreted in the urine and bile along with small amounts of unchanged chloromycetin⁸. Although results are reported as found to 0.1 mcg. per ml., an error of ± 0.3 mcg. per ml. would probably be a better esti-

mate; the results indicate the trend in chloromycetin concentration and show that the concentration of nitro compounds in the serum is very low. All results are expressed as micrograms of chloromycetin-equivalents per cubic centimeter of serum.

Although the peak levels were not too high, the decline was very gradual and after 12 hours the levels were approximately the same, especially with the 1 Gm. dosage.

The exact concentration of chloromycetin which must be maintained in the blood serum for therapeutic effect cannot be stated. This

(Continued on page 34)

⁷ Glazko, A. J., Wolf, L. M., Dill, W. A., and Bratton, A. C., Jr.: "Biochemical Studies on Chloramphenicol (Chloromycetin). II. Tissue Distribution and Excretion Studies," *J. Pharmacol. and Exptl. Therap.*, 96, 445 (1949).

⁸ Glazko, A. J., Dill, W. A. and Rebstock, M. D.: "Biochemical Studies on Chloramphenicol (Chloromycetin). III. Isolation and Identification of Metabolic Products in Urine," *J. Biol. Chem.*, 183, 679 (1950).

Midwinter Conference Speakers

GEN. WAYNE O. KESTER



Gen. Wayne O. Kester, president-elect, AVMA, was born in 1906 at Cambridge, Neb., and received his veterinary degree from Kansas State College in 1931. General Kester is well versed in the livestock industry and in veterinary medicine. During the past 6 years as chief of the Air Force Veterinary Service he has traveled extensively at home and abroad.

He has maintained surveillance of food supply situations, food producing animals, and animal disease with respect to their possible effect on our troops overseas, as well as our livestock industry and the public health and welfare in general.

H. P. BONNIKSON



Dr. Harry P. Bonnikson is Chief of the Bureau of Livestock Disease Control, Division of Animal Industry, California State Department of Agriculture, Sacramento. He was born in Humboldt County, California, attended the University of California, and graduated from the New York State Veterinary College, Cornell University, in 1915. He was a lieutenant in the Veterinary Corps in World War I.

Dr. Bonnikson began State work with the State Dairy Bureau, San Francisco, which then became part of the State Department of Agriculture when it was formed in 1919. He has participated in many livestock disease eradication programs, such as control of sheep scabies, bovine tuberculosis, vesicular exanthema in swine and brucellosis.

Welcome to Davis

As the time again draws near for the Midwinter Conference, we at the School of Veterinary Medicine look forward to opening the doors in welcome to our many friends in the profession who will be coming to Davis. It is a time also of making new friendships to be cherished for the rest of our lives. Not only do we extend a welcome, but we put at your disposal our facilities and any special talent we may possess. We hope you will feel free to contact staff members who may be helpful in discussing particular problems. This personal contact and acquaintance is always the most satisfactory relationship and we encourage you to become better acquainted with more of us. We wish for you also the most successful Midwinter Conference yet.

DONALD E. JASPER
Dean, School of Veterinary Medicine
University of California, Davis

R. J. BEAMER



Dr. R. J. BEAMER graduated from Iowa State College in 1940. He practiced in Iowa City until 1945, when he moved to Cleveland and became associated with Dr. H. E. Jensen until 1955. In the spring of 1955 he accepted the position as director of the Small Animal Clinic at A. & M. College of Texas.

He is a member of the Iowa State VMA, the Ohio State VMA, and has held offices in the Iowa State Association and a number of its subsidiary branches, including past-president of the Mid-West Small Animal Association. He is a member of Phi Zeta, the Masons and Shrine, the Elks and Kiwanis Clubs.

* * *

CHARLES J. YORK



Dr. CHARLES J. YORK joined Pitman-Moore Company, Indianapolis pharmaceutical firm, in September, 1952.

In 1955, he was named director of the firm's virus research laboratory, where his work has dealt specifically with the isolation and identification of viruses and related organisms producing disease in domestic animals, including leptospirosis, Blue Tongue, Mucosal Disease of Cattle, and Transmissible Gastroenteritis.

* * *

MORRIS ERDHEIM



Dr. MORRIS ERDHEIM received his veterinary degree from the New York State Veterinary College at Cornell University in 1939. Immediately after graduation, he joined the USDA in the Bureau of Animal Industry, serving this branch of government until entering the Army.

Following four years' service in the Veterinary Corps, Dr. Erdheim established a general practice at Grayslake, Illinois. Prior to joining Dawe's Laboratories in 1954 as staff veterinarian, he served as veterinary consultant to the company. He has since been appointed Director of Technical Development.

* * *

C. P. SCHMIDT



Dr. C. P. SCHMIDT graduated from Kansas State College in 1935, and after spending a year with the Bureau of Small Animal Industry in Texas and California he entered general practice in Worthington, Minn. With the exception of his active duty with the Army he has remained in Worthington since 1936. Dr. Schmidt's Army duty was at Camp Carson, Colo., and two years overseas in the China, Burma and India theatre. Most of this time was spent in Calcutta, India. He looks forward to his return visit to California.

E. A. WOELFFER



Dr. E. A. WOELFFER was born on a farm in Wisconsin, graduated from the University of Wisconsin in 1922 with a B.S. degree in Agriculture and obtained a degree in Veterinary Medicine from Cornell University in 1931.

Following graduation from Cornell, he became Farm Supervisor and Veterinarian of four large dairy farms owned by a large milk company in Boston. During that time he was secretary-treasurer of the Massachusetts and New England Veterinary Associations, also past president of the Massachusetts Veterinary Association and past member of the Massachusetts Board of Registration.

R. D. RADELEFF



Dr. R. D. RADELEFF is a native of Kerrville, Texas, and a graduate of Texas A. & M., class of '41. After brief service in Meat Inspection he spent seven years in general practice in Kerrville, then seven years in research, primarily with the toxicity of insecticides to livestock. He is now responsible for toxicity of agricultural chemicals in general. He contributed to the knowledge of lead arsenate efficiency against tapeworm of ruminants while in practice. He has prepared twenty-six research papers on insecticide toxicity.

Conference Speakers

- R. J. Beamer, D.V.M., Director, Small Animal Clinic, A. & M. College of Texas, College Station, Texas.
- H. P. Bonnikson, D.V.M., Chief, Bureau of Livestock Disease Control, Division of Animal Industry, Calif. State Dept. of Agriculture, Sacramento.
- Charles H. Burger, D.V.M., Practitioner, Bakersfield.
- Howard Carroll, D.V.M., Practitioner, San Francisco.
- M. T. Clegg, Ph.D., Animal Husbandry Dept., College of Agriculture, University of California, Davis.
- George W. Eberhart, D.V.M., Head of Small Animal Surgery, Kansas State College, Manhattan, Kansas.
- Morris Erdheim, D.V.M., Director, Technical Development, Dawe's Laboratories, Inc., Chicago.
- Edward Fisher, Dog Groomer, San Francisco.
- Bernard A. Hoehner, D.V.M., Practitioner, San Mateo.
- J. W. Kendrick, D.V.M., School of Veterinary Medicine, University of California, Davis.
- Peter C. Kennedy, D.V.M., School of Veterinary Medicine, University of California, Davis.
- Wayne O. Kester, D.V.M., President-elect, AVMA; Chief, Veterinary Corps, U. S. Air Force, Washington, D. C.
- Allen B. Lemon, A.B., Chief, Bureau of Chemistry, State Dept. of Agriculture, Sacramento.
- Dario Marioni, D.V.M., Practitioner, Sonoma.
- Blaine McGowan, Jr., D.V.M., School of Veterinary Medicine, University of California, Davis.
- Kenneth G. McKay, D.V.M., Extension Veterinarian, University of California, Davis.
- J. E. Moulton, D.V.M., School of Veterinary Medicine, University of California, Davis.
- W. D. Murray, Manager, Delta Mosquito Abatement District.
- M. A. Northrup, D.V.M., Practitioner, San Francisco.
- I. A. Peterson, D.V.M., Practitioner, Pasadena.
- G. D. Pettit, D.V.M., School of Veterinary Medicine, University of California, Davis.
- A. C. Pier, D.V.M., School of Veterinary Medicine, University of California, Davis.
- R. D. Radeleff, D.V.M., Veterinarian in Charge, Animal Disease and Parasite Research Branch, USDA, Kerrville, Texas.
- Wayne H. Riser, D.V.M., Secy., AAHA, Skokie, Ill.
- Harold D. Roberts, D.V.M., Eaton Laboratories, Inc., Norwich, N. Y.
- C. P. Schmidt, D.V.M., Practitioner, Worthington, Minn.
- O. H. Siegmund, D.V.M., Veterinary Research Dept., Merck & Co., Rahway, N. J.
- George R. Thomasson, D.V.M., Practitioner, North Hollywood.
- Homer G. Tully, D.V.M. Practitioner, No. Hollywood.
- Fred B. Walker, Jr., D.V.M., Practitioner, 3rd vice-president, CSVMA, Escondido.
- J. D. Wheat, D.V.M., School of Veterinary Medicine, University of California, Davis.
- E. A. Woelffer, D.V.M., Practitioner, Oconomowoc, Wis.
- Charles J. York, D.V.M., Virus Research Laboratories, Pitman-Moore Co., Indianapolis, Ind.

AAHA Dinner

The American Animal Hospital Association Dinner will be held at 7 p. m., Monday, January 23, at the Hotel El Rancho. Please make reservations for the dinner when registering. All Veterinarians are invited. Dr. William K. Riddell is chairman. Dr. Wayne H. Riser will be Banquet Speaker.

PRO

CALIFORNIA STATE VETERINARY MIDWINTER CONFERENCE

PROGRAM COMMITTEE: *Chairman*, O. D. S.
Howard Carroll; *Reginald A. Stocking*, Edw. A. Rh

JANUARY 23, 24, 25, 1956, SCH OF V

MONDAY, JANUARY 23, 1956

GENERAL SESSION

Morning

9:00-12:00—Registration.

Afternoon

- 1:30—Invocation.
Welcome.
Response.
- 2:00—AVMA Affairs, Wayne O. Kester.
- 2:30—Veterinary Feed Industry Relations, Morris Erdheim.
- 3:00—Demonstration and Talk on Latest Communication Equipment, Pacific Telephone & Telegraph Co.
- 3:30—Tax Problems, Internal Revenue official.
- 4:00—Business Meeting, CSVMA.

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TUESDAY, JANUARY 24, 1956

SMALL ANIMAL SECTION

Auditorium

Morning

- 8:45—Film.
- 9:15—Paper on Sutures, Davis & Geck representative.
- 9:35—Feeding of Dogs, Gaines Division, General Foods Corp.
- 10:10—Evaluation of Distemper Vaccination, Wayne H. Riser.
- 10:55—Toxoplasmosis in Dogs, Charles J. York.
- 11:35—Pathology, Peter C. Kennedy.

Afternoon

- 1:30—Furadantin, Harold D. Roberts.
- 2:20—Subject to be announced, R. J. Beamer.
- 3:00—Subject to be announced, Wayne H. Riser.
- 3:40—Coxo-Femoral Luxations, G. D. Pettit.
- 4:00—Present Usage of Hydrocortisone in Veterinary Practice, O. H. Siegmund.
- 4:15—Ear Trimming, Homer G. Tully.
- 4:30—Question Period.
- 7:30—CSVMA Banquet, Hughes Hall, No. Dorm. Caspar Weinberger, State Legislature, speaker.

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TUESDAY, JANUARY 24, 1956

LARGE ANIMAL SECTION

Anatomy Laboratory

Morning

- 8:45—Film.
- 9:00—Field Observations in Mastitis, A. C. Pier.
- 9:20—Experiences with Infectious Rhino-Tracheitis, "Red Nose," in Feed Lots, Dario Marioni.
- 9:55—Infectious Rhino-Tracheitis, The Experimental Disease, J. E. Moulton.
- 10:10—Some Newer Findings on Ruminant Nutrition, Stressing Cellulolytic Activity, Morris Erdheim.
- 10:50—Diagnosis and Treatment of Hog Diseases, C. P. Schmidt.
- 11:30—The New Brucellosis Regulations, H. P. Bonnikson.

Afternoon

- 1:30—Antibiotics in Lamb Feeding, Blaine McGowan, Jr.

RAM

RY MEDICAL ASSOCIATION CONFERENCE

D. Stafford (deceased); *Acting Chairman*,
A. Rhode, Donald E. Barr, John Carricaburu.

OF VETERINARY MEDICINE, DAVIS

- 1:45—Practical Hormone Therapy, E. A. Woelffer.
- 2:25—Symptomatology and Treatment of Insecticide Poisoning, R. D. Radeleff.
- 3:30—Subject to be announced, W. D. Murray.
- 3:40—Analysis for Insecticides and the Role of the Bureau of Chemistry in Suspected Poisonings, A. B. Lemon.
- 4:00—Question and Answer Panel, R. D. Radeleff, A. B. Lemon and W. D. Murray.

Evening

- 7:30—CSVMA Banquet, Hughes Hall, North Dormitory

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WEDNESDAY, JANUARY 25, 1956

SMALL ANIMAL SECTION

Auditorium

Morning

- 8:45—Film.
- 9:30—Furacin, Harold D. Roberts.
- 10:05—Subject to be announced, R. J. Beamer.
- 10:45—Virus Diseases of the Dog, Charles J. York.
- 11:30—Coffee and sandwich break.
- 11:50—Demonstration: Pet Birds, Howard Carroll.
- 12:00—Demonstration: Devita Pin, G. D. Pettit.
- 12:20—Demonstration: Debarking a Dog, M. A. Northrup.
- 12:30—Demonstration: Perineal Hernia, George W. Eberhart.
- 1:00—Demonstration: Cruciate Ligament Repair, Bernard A. Hoehner.
- 1:30—Demonstration: Harderian Gland Excision and Feeding Hospital Cats, G. R. Thomasson.
- 1:40—Demonstration: Trimming, Clipping, etc., Edward Fisher.
- 2:00—Demonstration: Deskunking a Skunk, I. A. Peterson.

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WEDNESDAY, JANUARY 25, 1956

LARGE ANIMAL SECTION

Anatomy Laboratory

Morning

- 8:45—Film.
- 9:15—Observations on Vaginitis in Cattle, J. W. Kendrick.
- 9:30—Establishing a Sterility Control Program, E. A. Woelffer.
- 10:10—The Use of Stilbesterol in Animal Production, M. T. Clegg.
- 10:40—The Present Use of Hydrocortisone in Veterinary Practice, O. H. Siegmund.
- 11:10—Special Problems in Pet Horse Practice, Charles H. Burger.
- 11:40—Survey of Abortion in California, Kenneth G. McKay.
- 12:00—Coffee and sandwich break.
- 12:30—Demonstration: Intra-Articular Injections in the Equine and Bovine, J. D. Wheat.
- 1:00—Demonstration: Early Pregnancy Diagnosis and Uterine Infusion Technic, E. A. Woelffer.
- 1:30—Demonstration: Electro-Ejaculation in the Bull, F. B. Walker, Jr.

Program of Western States Poultry Disease Workers' Conference

Room 1006, Veterinary Science Bldg.

University of California, Davis

MONDAY, JANUARY 23, 1956

President: D. E. STOVER, D.V.M.

- 9:00—Opening Remarks.
D. E. Stover, D.V.M., State Department of Agriculture, Sacramento
Session Chairman: E. E. Jones, D.V.M., State Department of Agriculture, Livestock and Poultry Pathology Laboratory, San Gabriel.
- 9:10—Further Observations on Avian Infectious Hepatitis.
G. N. Lukas, D.V.M., State Department of Agriculture, Livestock and Poultry Pathology Laboratory, Fresno.
- 9:30—Transmission Experiments on Avian Synovitis and Hepatitis.
R. W. Wichman, D.V.M., Department of Poultry Pathology, School of Veterinary Medicine, University of California, Davis.
- 9:40—Discussion.
- 9:45—Fungus Infections in Poultry.
H. L. Chute, D.V.M., M.Sc., Animal Pathology Laboratory, University of Maine, Orono, Maine.
- 10:05—Studies of Infectious Bronchitis Virus Strains.
L. G. Raggi, D.V.M., Ph.D., Department of Poultry Pathology, School of Veterinary Medicine, University of California, Davis.
- 10:20—Discussion and Recess.
- 10:35—Studies of Infectious Sinusitis of Turkeys.
Royal Bagley, D.V.M., Dept. of Veterinary Science, Utah State Agricultural College, Logan, Utah.
- 10:50—Egg Transmission Studies on Infectious Sinusitis of Turkeys.
A. C. Jerstad, D.V.M., Western Washington Experiment Station, Puyallup, Wash.
- 11:05—Discussion.
- 11:10—A Viral Etiology of Chronic Respiratory Disease.
E. P. Johnson, D.V.M., Ph.D., Animal Pathology Section, Virginia Agricultural Experiment Station, Blacksburg, Va.
- 11:30—PPLO Antigen Preparation and Application.
H. E. Adler, D.V.M., Ph.D., Department of Poultry Pathology, School of Veterinary Medicine, University of California, Davis.
- 11:50—Discussion.
- 12:00—Luncheon—Business and Election of Officers for coming year. Time, place, cost and other details to be announced.

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TUESDAY, JANUARY 24, 1956

Session Chairman: L. E. Bartelt, D.V.M., State Department of Agriculture, Livestock and Poultry Pathology Laboratory, Petaluma, Calif.

- 9:00—Panel Discussion: Requirements and Future Outlook for Part-Time Poultry Practice.
Moderator: S. A. Fuller, D.V.M., Arcata; Erwin M. Plecher, D.V.M., Watsonville; M. A. Nilson, D.V.M., Carmichael; W. F. Hughes, D.V.M., Kimber Farms, Inc., Niles.
- 9:30—Panel Discussion: Use and Misuse of Drugs in Poultry Medication.
Moderator: A. S. Rosenwald, D.V.M., Agricultural Extension Service, University of California, Davis.
Topic: Drugs Used for Respiratory Infections and Unidentified Diseases, E. P. Johnson, D.V.M., Ph.D., Animal Pathology Section, Virginia Agricultural Experiment Station, Blacksburg, Va.
Topic: Drugs Used for Intestinal Infections, Stanton Jamison, D.V.M., State Department of Agriculture Poultry Pathology Laboratory, Turlock.
Topic: Drugs Used for Systemic Infections, Bernard Koch, D.V.M., Santa Cruz.
Topic: Poultry Drugs and Poultry Feeds, E. M. Gildow, D.V.M., M.S., Albers Research Station, Carnation Milk Farms, Carnation, Wash.

(Continued on page 33)

Hotel Reservations

Hotel El Rancho, West Sacramento, is official headquarters for living accommodations. For reservations there, or at nearby motels, please write direct, giving time of arrival and departure.

Malignant Oedema Infection in the Horse—A Case Report

CHARLES H. REID, D.V.M.

Practitioner, Hollywood, Calif.

Subject was a bay mare, seven years old, of the quarter-horse breed, with the following symptoms: Temperature 105, respiration 20, pulse 75, not eating, standing in a corner of the stall looking dejected.

Examination disclosed a small wound about half an inch in extent, roughly triangular, situated just above the stifle when viewed from the back, and about the septum between the semimembranosus and semitendinosus muscles, around which there was a swelling about four inches in circumference, yielding very little secretion. History was that she had been all right at 10 p.m. the night before, but that the owner noticed this wound with a little blood on it in the early morning when he came out to feed. The wound had swollen so rapidly that the owner had sought professional aid.

We suspected that a splinter of wood had in some manner entered the leg in this region, and stated so, but the owner was very positive that such could not have been the case. A searching examination of the corral disclosed one board at about this height from which a splinter of wood about six inches long had been torn off; this was brought to the owner's attention, but again the theory was negated.

Probing of the wound was possible for only about an inch, and no foreign body could be felt; antibiotics were injected into the swollen area, and administered to the mare, and a tentative diagnosis was made of malignant oedema, following the entrance of a foreign body, possibly a splinter of wood. It was explained that this was possibly the beginning of a case of "gas gangrene" and an unfavorable prognosis was given.

Upon a second visit that day the temperature had not changed, but the swelling had increased to a prominent area the size of a large dinner plate—treatment was again administered, and the swollen area was punctured in several places to allow the escape of serum. Serum exuded from the punctured wounds copiously that night to the point where the entire leg below the wound was soaked, and the bedding was quite wet where the exudation had run off when seen the next morning. The entire leg was now swollen from the level of the tuber ischii to a point about six inches above the hock; temperature 103.5, mare not eating or drinking; treatment was administered, the wound was searchingly probed again with the same results, and again the suspicion of a splinter being the cause was negated by the owner. Later that day the mare showed more swelling of the leg, more exudation, and temperature 102.8.

The third day swelling had increased; now the gluteal muscles were involved, so that one

hip looked higher than the other; serum still exuded, temperature 102.8, leg getting stiff when the mare was walked; treatment was again administered, the mare receiving intravenous injections which included about every treatment that had been devised in these cases, although the owner was informed that the animal was dying; later that day the mare showed distressed breathing, temperature 102.3, pulse 120; the vulva and smooth skin of the perineal region were swollen out of all normal semblance, the udder and belly on the right side beginning to swell. The owner was told that it was only a question of time, and the animal expired a few minutes after a midnight visit.

Autopsy was requested, which was performed the next morning by Dr. R. H. McIntyre of the Los Angeles County Live Stock Inspector's office; the lungs showed some congestion, there was a unilateral peritonitis on the right side progressing from the back of the animal forward to the area of the kidney; the involved leg was a mass of semigelatinous serum subcutaneously, and upon cutting across the swollen muscles the site of entrance and path of a foreign body were plainly visible, together with evidence of some "walling off" about an inch and a half into the muscle tissue; there was no pus evident, but two pieces of splinter about 1½ to 2 inches long were recovered from the deep connective tissue lying between the semitendinosus and biceps femoris muscles which contains the tibial and peroneal vessels and nerves¹. This location was about six or seven inches in a straight line anterior to the wound in the skin. A section of spleen tissue was taken to the laboratory for further study and culture, and the report from the laboratory of the L. A. County Live Stock Inspector's office was that a pure culture of *Clostridium Welchii* had been recovered from the spleen tissue.

This report is interesting for the following reasons:

1. The recovery of the splinter of wood, which matched with the suspected board proves the suspicion as to the cause of the wound was well founded.
2. The laboratory findings substantiate the diagnosis.
3. Treatment was of no avail.
4. The fast progressive swelling and the temperature was typical of these infections.
5. This infection is not of frequent occurrence, but it behooves us to remember that this

(Continued on page 33)

¹ See "Cross Section of Middle of Right Thigh of Horse," page 331, Fig. 290, *The Anatomy of the Domestic Animals*, by Septimus Sisson, S.B., V.S. Published by W. B. Saunders Co., 1914.

Bureau of Livestock Disease Control

H. P. BONNIKSON, D.V.M.

New California Brucellosis Regulations

As a result of hearings held in July by the Director of Agriculture, Brucellosis Regulation 754.1, which becomes effective January 2, 1956, was changed to read as follows:

"754.1. DAIRY CATTLE BRUCELLOSIS REGULATION (INTRASTATE). On and after January 2, 1956, all cattle of the dairy breeds shall at the time of public or private sale, either bear or be accompanied by evidence of official vaccination against brucellosis, or be accompanied by a licensed veterinarian's certificate of negative blood test for brucellosis made by a laboratory of the State Department of Agriculture, University of California School of Veterinary Medicine, or an approved County Livestock Inspection Laboratory within thirty (30) days prior to such public or private sale. Calves under six months of age and cattle of the dairy breeds consigned direct for immediate slaughter and steers are excepted from this regulation."

The regulation was changed by deleting the words "loan, trade, gift or otherwise disposed of." The wording was also changed to make the provisions of the regulations apply "at the time of sale" instead of when such cattle are "offered for sale."

A companion regulation pertaining to the interstate movement of cattle of dairy breeds remains unchanged and reads as follows:

"754.2. DAIRY CATTLE BRUCELLOSIS REGULATION (INTERSTATE). On and after January 2, 1956, all cattle of the dairy breeds brought into the State in addition to other requirements shall bear or be accompanied by acceptable evidence of official vaccination against brucellosis between the ages of four and twelve months, or by certificate of negative blood test for brucellosis conducted within thirty (30) days prior to entry by a laboratory approved by the State Livestock Sanitary Official in the state of origin. Calves under four months of age and cattle of the dairy breeds consigned direct for immediate slaughter in an establishment having Federal, State or State Approved Municipal Meat Inspection and steers are excepted from this requirement."

Garbage Cooking Law

The 1955 session of the California Legislature enacted a garbage cooking law—Article 2b, "Swine Diseases From Garbage"—aimed to assist in the control of vesicular exanthema and other infectious and contagious diseases of swine. It provides that all garbage fed to swine, except ordinary household garbage fed on the same premises, must be cooked to boiling or equivalent temperature for at least 30 minutes. Also the law provides that an annual license must be obtained from the Director of Agriculture in order to feed garbage to swine. In addition the premises on which garbage is fed must be operated in a clean and sanitary manner. Rules and regulations are being made that this law may be enforced beginning January 1, 1956, its effective date.

Since March 19, 1954, however, vesicular exanthema has been controlled in California through the use of a quarantine regulation adopted as an emergency measure.

Livestock Diseases Reported

DR. H. P. BONNIKSON

Tabulation of diseases reported to the State Bureau of Livestock Disease Control during the period May to August, inclusive, 1955:

	May-August Incl. 1955		
	North	Central	South
Actinomycosis		13	
Acute upper respiratory disease, cattle		1	2
Anaplasmosis	17	22	8
Anthrax		2	
Blackleg	1		
Bluetongue of sheep	2	2	
Bovine bacillary hemoglobinuria	1	5	1
Chorioptic scab, sheep	1	1	
Coccidiosis, cattle		1	
sheep	3	2	
Contagious ecthyma, sheep		1	
Cysticercus bovis	30	18	30
Encephalitis, bovine	1	1	1
Equine encephalomyelitis	2	10	3
Equine virus abortion		1	
Foot rot, sheep	5		
Hog cholera	11	4	2
Infectious atrophic rhinitis	1	1	3
Johnes' disease	3		
Leptospirosis, cattle	3	83	12
swine			1
Listeriosis, cattle		2	2
Malignant edema	2	9	
Mycotic stomatitis		2	2
Necrotic rhino-tracheitis, cattle	1	5	
Paratyphoid, cattle	1	5	
swine	1	1	
Rabies, bovine	1		
Sarcoptic scab, swine		2	
Sporadic bovine encephalomyelitis		2	1
Swine erysipelas		9	1
Vesicular exanthema		3	1
Vibrio fetus, cattle		3	

Death of Nicholas J. Morrissey

Nicholas J. Morrissey, director of the State Department of Professional and Vocational Standards, died in San Francisco, October 25th. He was 49.

Mr. Morrissey spent 23 years in the state service, and was appointed by Governor Knight to his last post in 1953, upon the resignation of James A. Arnerich.

Dr. Seymour Roberts Installs New Steam Cleaner



Dr. Seymour Roberts has installed a new Malsbary Model 60-GS steam vapor cleaner at his Richmond Veterinary Hospital, pictured above.

The new equipment is used for sterilizing and cleaning kennels and outside run cages after pets have been discharged from hospital. It is also used to clean general facilities and to sterilize and clean food pans.

Three wards, containing 60 kennels, can be completely sterilized and dried in about two hours by two persons. The cleaner is mounted on a concrete deck outside the hospital building. With nozzle control of the cleaner, advantages of portability are obtained by piping hot solution to various cleaning stations, and using 50 feet of hose.

Track Veterinarians

(Continued from page 19)

ing commission. He is usually responsible for all official phases of veterinary activities in racing, and may have an assistant at each track. The official veterinarian carries out or directs the various tasks, including checking animals for which there is a request to scratch, examination and observation of animals in the paddock, surveillance of animals between the judges' stand and the sampling stall, collection of saliva samples, supervision of urine collectors, and maintenance of necessary records. In certain areas there may also be a track veterinarian who has no official capacity, but handles those veterinary problems arising at the track which are not directly related to duties of the official veterinarian.

The proper collection and handling of adequate urine and saliva samples is a very important function of the official veterinarian, and one which sometimes receives inadequate attention. It has been demonstrated that satisfactory horse saliva samples cannot be obtained in less than four minutes of actual chewing on swabs; however, that four minutes becomes rather long when trying to control certain horses and there is a strong temptation to shorten the time. If the veterinarian is to

render the best service, he will make every effort to follow recognized procedures. Adequate training must be provided for urine collectors and this is also a duty of the official veterinarian.

There is a certain romance associated with racing; it is exciting and provides a constant flow of new and interesting experiences. Whether the veterinarian is in private practice, with many clients involved in racing, or is in an official capacity, the problems encountered provide a stimulating challenge to his abilities, an opportunity to render fine professional services and a method to augment his practice income.

Fort Dodge Appointments

Mr. Scott L. Barrett has been elected chairman of the board of directors of Fort Dodge Laboratories, Inc., and Dr. Burton J. Gray has been elected president and general manager.

Examination January 26, 27 and 28

The Board of Examiners in Veterinary Medicine will hold an examination for the licensing of qualified veterinarians January 26, 27 and 28, at the School of Veterinary Medicine, University of California, Davis.

New Product for Hemorrhage Control

KLOT is an original product of the Warren-Teed veterinary research program. It is a parenteral hemostatic drug whose action is based upon a new concept of hemorrhage control.

KLOT consists of optimally proportioned amounts of n-butanol, highly refined, and dimethyltoluthionine of specifically standardized and highly refined grade in isotonic saline solution.

n-butanol when brought into contact with traumatized or pathologic tissue rapidly effects hemostasis at the site of hemorrhage. The medicament is best brought to the hemorrhage area by parenteral administration, although local infiltration produces dramatic effect and irrigation is a frequently employed and useful application.

Dimethyltoluthionine (toluidine blue O—specially standardized and refined) exerts a specific antiheparin effect. This is accomplished through a heparin neutralization process.

This combined effect produces rapid, efficient and safe hemostasis economically.

KLOT is not a lipid or protein material and is nonirritating to tissue; obviously this eliminates the danger of anaphylactic reaction. The toxicity of this drug is not a matter of practical concern since it is practically impossible to administer quantities that will cause toxic reactions. The LD 50 in adult white mice is 172 calculated therapeutic doses.

The drug may be administered by any parenteral route since it is nonirritating, nonprotein and possesses a therapeutic index which is many times its recommended dose. It has been administered to pregnant and lactating animals; very young as well as very old animals of all common species without detectable toxic effect.

Universal Rabies Vaccination Urged at Statewide Meeting

The Statewide Rabies Control Subcommittee of the State Chamber of Commerce met October 18th in San Francisco and moved: "That this Committee recommend to the State Chamber of Commerce that it sponsor legislation for the universal vaccination of all dogs in areas declared endemic by the State Department of Public Health, and that the Chamber sponsor a program to achieve passage of this legislation."

A committee was appointed by Chairman S. V. Christerson to draft proposed legislation in keeping with the committee's recommendations. The following were appointed to that committee:

Lewis T. Bullock, Chairman; Donald E. Cavileer, Ben H. Dean, J. Edgar Dick, Roy O. Gilbert, John Hunton, William F. Johns, W. P. Wing, and Neil K. Holbrook, Secretary.

Program of Western States Poultry

(Continued from page 29)

10:20—Recess.

10:30—Panel Discussion: Prevention, Diagnosis and Control of Mixed Respiratory Infections in Chickens.

Moderator: W. W. Dorcestor, D.V.M., State Department of Agriculture, Sacramento.

Topic: A Practical Approach to the Control of CRD, H. E. Adler, D.V.M., Ph.D., University of California, Davis.

Topic: Field Observations on Immunity and Mass Vaccination, R. A. Bankowski, D.V.M., Ph.D., University of California, Davis.

Topic: Control of NCD and IB in Practice, W. M. Dungan, D.V.M., Petaluma.

Topic: Control of NCD and IV in Practice, S. R. Exstrom, D.V.M., Rio Linda.

Topic: Immunization Procedures for Respiratory Diseases in the Presence of CRD, H. L. Chute, D.V.M., M.Sc., University of Maine, Orono, Me.

Topic: Vaccination Need Not Be Perpetual, C. M. Hamilton, D.V.M., Western Washington Experiment Station, Puyallup, Wash.

11:30—Discussion.

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Poultry Disease Demonstrations

Dr. L. G. RAGGI

University of California, Davis

The number, place and time of these demonstrations will be announced during the course of the Conference.

Attendance at these meetings is limited to veterinarians, veterinary students, and University Veterinary Science and Poultry Husbandry Department research personnel.

Applicants

Myron H. Schaffer, Santa Rosa. Vouchers: J. C. O'Brien, John E. Wion.

Joseph Wachs, San Francisco. Vouchers: Andrew J. Creely, Bruno Turkheimer.

William J. McAllister, Concord. Vouchers: Jay H. Bouton, F. E. Kling.

Neal James Dow, El Cerrito. Vouchers: B. M. McWhinney, John S. Blackard.

Wendell Lee Kanawyer, San Francisco. Vouchers: Milton C. Levy, M. A. Northrup.

William R. Nathan, Rio Dell. Vouchers: M. P. Roberts, E. R. Holland.

John H. Clark, Whittier. Vouchers: Ralph C. Vierheller, Burton Pike.

H. C. Russell, Berkeley. Vouchers: J. W. Roberts, Hans H. Schwab.

Donald B. Martin, Oakland. Vouchers: Irving M. Roberts, Reynout Roland-Holst.

Oedema Infection in Horse

(Continued from page 30)

soil-borne anerobic spore-bearing bacterium is like the poor—"we have them always with us."

Practically, the obvious question arises—How fast must this animal have been running backwards to drive such a splinter in her leg such a distance?

The other question—why?—will probably never be answered.

Autopsies, properly conducted, can be very interesting.

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Our Congratulations to "Veterinary Medicine"

THE CALIFORNIA VETERINARIAN takes this opportunity to congratulate **VETERINARY MEDICINE**, published in Kansas City, on its 50th anniversary. The November issue is outstanding, from both an editorial and advertising standpoint. The progress of the journal during the past half-century has closely paralleled the progress of veterinary medicine.

We salute Dr. Robert L. Anderes, publisher and editor, on this Golden Anniversary of **VETERINARY MEDICINE**, and we wish continued success to him and his staff in promoting the art and science of veterinary medicine.

OUT-OF-STATE NEWS

The Central Arizona VMA held its regular monthly meeting in Phoenix, October 11. Dr. Jack Fuller was host.

Dr. Frank Benton of the Small Animal Committee led a discussion about case reports presented by Drs. George Calderwood, D. W. Hott and T. T. Smith. Dr. Jack Fuller led a discussion on minor revisions of the suggested minimum fee schedule for large animal services. This was followed by a discussion on how best to determine that proper tuberculin testing of cattle is being done.

Blood Serum Concentrations

(Continued from page 25)

amount would vary, depending upon the sensitivity of the invading organism.

No onward reactions were noticed in any of the experimental animals; in fact, the body temperature and general attitude of Calf No. 2972 was normal within 24 hours after receiving chloromycetin intramuscularly and this calf appeared normal throughout the remainder of the experiment.

Acknowledgments

We wish to express our thanks to Dr. A. J. Glazko and Miss Loretta M. Wolf for conducting the colorimetric assays, and to Dr. J. Ehrlich and Mrs. Margaret Galbraith for conducting the microbiological assays. The authors also express their appreciation to Dr. G. D. Brigham and Mr. George Smith for making these calves available and to Mr. Robert Klein for his assistance in handling the calves.

Summary

Chloromycetin blood serum levels in calves have been determined by microbiological and colorimetric assay methods following a single intramuscular injection of chloromycetin in doses of 1-Gm. and 2-Gm.

The serum levels of chloromycetin following intramuscular administration reach a peak within two to four hours. Chloromycetin given intramuscularly in single doses of 1-Gm. and 2-Gm. produced blood levels that were sustained for periods of at least 12 hours with some animals having a detectable amount 24 hours after injection. This indicates that the drug is probably absorbed slowly over a long period of time, which may account for the excellent therapeutic effect of such low doses of chloromycetin.

Dr. Quin, Senior V-P, Jen-Sal

Dr. A. H. Quin, for several years a vice-president and director of professional services for Jensen-Salsbery Laboratories, Inc., Kansas City, was recently made senior vice-president and a director of the company.

LOCAL ASSOCIATION NEWS

The North San Joaquin Valley VMA met at the Hotel Covell, Modesto, October 26. Two excellent movies, "Veterinary Medicine as a Career" and "Distemper Syndrome," were shown, after which there was a general discussion on problems in veterinary practice.

* * *

A council meeting of the Southern California VMA was held October 26, in Los Angeles, which was presided over by Dr. William Putney, president-elect.

Duties of officers as provided in the new by-laws were read.

There was considerable discussion on the establishment of voluntary rabies clinics requested by the Los Angeles SPCA. The council voted that veterinarians participating in these clinics should be paid a minimum of \$10.00 per hour, and a maximum of \$12.50 per hour. It was voted to cooperate with the SPCA in setting up voluntary clinics, and with other organizations sponsoring voluntary rabies clinics.

The council also voted to accept a fee of \$1.50 per dog to vaccinate dogs under a compulsory law in the city of Los Angeles.

* * *

The Bay Counties VMA held its annual Ladies' Night Dinner-Dance at the San Mateo Elks' Club, October 25th. Guest of honor was Major Jose Garcia de Suarez of Santiago, Chile. He was the veterinarian chosen by the president of Chile to accompany the famous "Riders of the Andes" for their appearance at San Francisco's Cow Palace for the recent Rodeo and Horse Show.


Dr. Joseph Arburua acted as interpreter when Major Garcia gave his talk. During his stay in the Bay Area the Major was entertained on numerous occasions by Dr. Emmet Paul and Mrs. Paul.

At the November 8th meeting, held at Veneto's Restaurant, San Francisco, the group elected the following officers: President, C. Edward Taylor; Vice-President, Emmet Paul; Secretary-Treasurer, Irving Roberts. Dr. Arburua installed the new officers.

Speaker of the evening was Dr. Donald Bunce of the research staff of Armour & Company, who spoke on the use of the drug "A.C.V. No. 12."

Anti-Rabies Serum Available

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Local Associations Urged to Help

There are a number of members of the 20 local associations who are not members of the State Association. In some instances, these doctors are *officers* of their locals.

Recently, your Executive Secretary wrote to the secretaries of each local, urged 100% membership in the CSVMA.

The most encouraging reply came from the Bay Counties VMA, which immediately sent a letter to each of its members printed here:

Dear Doctor:

The Secretary of the California State Veterinary Medical Association has requested that local associations assist him in gaining members to the State Association.

Why should you join the state association? Numerous reasons could be given, e.g., that you owe it to your cohorts, but speaking from a personal (and selfish) standpoint, you owe it to yourself and your business. I firmly believe that I am "ten-times" the veterinarian that I would have been if I had not been a member for many years.

The other day I did a soft palate resection that I might have missed if I had not seen it done at a state meeting a couple of years ago. I have done many more anal gland operations since I learned an easier and better way at a state meeting. This means increased profits as well as prestige, plus self-satisfaction.

We need protection against "quacks" and harmful laws; thus our State Association protects us. I could go on and on but please take my word for it, "the State Association needs you and you need the State Association."

Sincerely,

EMMET PAUL, Secretary

Women's Auxiliary News

The Sacramento Valley Veterinary Auxiliary is extending a cordial welcome to all veterinary wives to attend the Midwinter Conference in Sacramento. Mrs. Charles E. Irwin, president of the State Auxiliary, has appointed Mrs. T. J. Hage as chairman of the local committee. Plans are being completed and arrangements made for a luncheon and program, followed by the semi-annual business meeting. The Midwinter meetings afford an opportune time to broaden your friendships and get a closer view of the Auxiliary's accomplishments.

Contributions totaling \$606.66 were received from local auxiliaries at the June meeting in Monterey. Redwood Empire Auxiliary, \$25; San Diego Auxiliary, \$35; (\$10 in memory of Mrs. Betty Lindley); Alameda-Contra Costa Auxiliary, \$100; Southern California Auxiliary, \$90; Sacramento Valley Auxiliary, \$50; Central California Auxiliary, \$31.66; Student Wives, \$275.

A donation of \$50 for the AVMA Auxiliary's Loan Fund was approved by the California Auxiliary membership.

The need for an emergency loan fund for veterinary students at Davis was recognized by the Auxiliary and a fund of \$300 was made available yearly for students in need of funds for emergencies.

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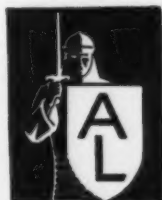
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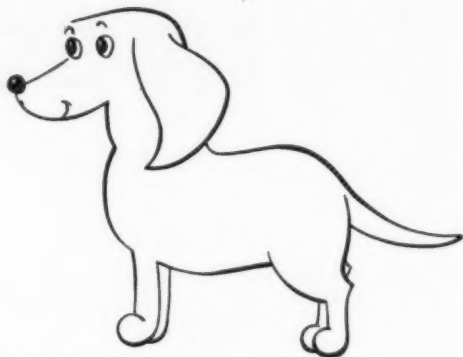
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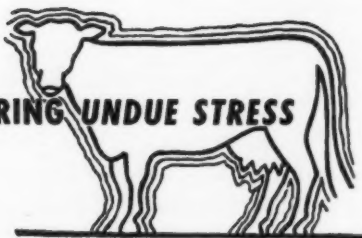
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